Maths Long Term Plans

	Autumn 1 1-7	Autumn 2 8-14	Spring 1 15-20	Spring 2 21-26	Summer 1 27-32	Summer 2 33-39
Year 7	N1 *Understanding of place value.* Key number bonds and multiplication facts Written methods of calculation. Rounding values. Using directed numbers. P1 Using a probability scale. Listing outcomes of events.	A1 Understanding algebraic notation. Simplifying algebraic expressions. G1 Calculate perimeter of shapes. Calculating areas. Understand properties of 3D shapes.	N2 Factors and multiples. Number patterns. Fractions; equivalent fractions and fractions of an amount. Percentages of an amount. A2 Coordinates. Horizontal and vertical lines.	G2 Properties of circles. Line symmetry. Transformations. N3 Prime numbers. *Powers and roots Highest Common Factors and Lowest Common Multiples.*	G3 Polygons. Angle fact. Angles in triangles. R1 Introduction to ratio. Unit conversions. Expressing quantities as fractions.	R1 Introduction to ratio. Unit conversions. Expressing quantities as fractions. S1 Pictograms. Bar charts. Frequency tables and diagrams. Median and mode averages.
Year 7 Numeracy	Place value up to 1000 Round to the nearest 10 or 100	Mental addition and subtraction involving 2-digit and 3-digit numbers Addition and subtraction with money	2, 3, 4, 5, & 10 times tables Multiply 2-digit numbers by 10 mentally	Find one quarter, half and three quarters of a shape, quantity or number	Compare and order numbers up to 1000 Round to the nearest 10, 100 or 1000	Mental addition and subtraction with numbers up to 4 digits Written addition and subtraction with numbers up to 3 digits
Year 8	N1 Using place value. More advanced	A1 Expanding brackets. Factorisation.	N2 Fractions, decimals and percentages.	G2 Measuring and drawing angles.	G3 Properties of special triangles.	R1 Unit pricing. Simplifying ratios.

	written calculations, including with decimals and directed numbers.. Application to real life; units of measurement P1 Outcomes of events. Mutually exclusive events.	Substitution. G1 More advanced areas. Applications of area and perimeter. Application of properties of shapes	All operations with fractions. A2 Sequences, including nth term.	Scale drawings. N3 Application to real-life problems. Function machines and inverse operations.	Angles and parallel lines. Angle sum of polygons. R1 Unit pricing. Simplifying ratios. Sharing in ratios.	Sharing in ratios. S1 Mean average and the range. Scatter diagrams. Pie charts.
Year 8 numeracy	6, 7, 8, 9, 11 and 12 times tables Division associated with times tables	Find unit and non-unit fractions of a number Add and subtract fractions with the same denominator	Negative numbers	Written addition of numbers with up to 2 d.p. Mental and written addition and subtraction of larger numbers	Written multiplication and division of 2-digit by 1-digit numbers Use times tables to multiply 3-digit numbers Mentally divide 2-digit numbers using partitioning	Write 1 d.p. or 2 d.p. numbers as fractions Simplify fractions Convert small numbers between mixed numbers and improper fractions
Year 9	A1 Graphs and graph constructions. N1 Rounding and estimation. Standard form. Exact representation of roots. G1 Area and circumference of	A2 Solving equations. Rearranging equations. Simultaneous equations. N2 Using percentages, decimals and fractions in calculations and applied situations.	R1 Increasing and decreasing by a percentage. Compound measures. Direct and inverse proportion. A3 Inequalities. Quadratic sequences. Regions.	P1 Two-way tables. Venn diagrams. Relative frequency. S1 Project work to include: Averages from a table. **END OF KS3**	**START OF GCSE** A1 (F) Expanding brackets and factorising Sketching graphs and functions Using flowcharts Linear sequences Special sequences N1 (F) Negatives in real life Equivalent fractions Factors, multiples and primes	G1 (F) Using a protractor Transformations Area of a trapezium Surface area Volume of cuboids

	circles. Volume and surface area of prisms, cones and spheres.	G2 Loci and constructions. Pythagoras. Trigonometry.			Powers and indices A1 (H) Substitution Straight line graphs Sketching functions Nth term of sequences N1 (H) Indices Fractions, decimals and percentages Rounding and estimation Bounds	G1 (H) Area of a trapezium Surface area Volume Angles and parallel lines Angles in polygons Bearings Constructions Sectors and segments Pythagoras' theorem
Year 9 Numeracy	Place value up to 1000000 Compare and order numbers up to 1000000	Add and subtract involving negative numbers Perform mental mixed calculations Written addition and subtraction with decimals	Mentally divide 3-digit numbers using partitioning Mentally multiply using partitioning Written division and interpret remainders as decimals	Convert from percentages to fractions and decimals Find 50%, 25%, 10% and 1% of a number Add and subtract mixed numbers	Round to the nearest 10000 or 100000	Mentally subtract bigger numbers Written subtraction of numbers with different d.p's Written addition and subtraction of 4-digit numbers
Year 10 Foundation	P1 Two-way tables Frequency tables Venn diagrams Averages from a table N2 Comparing fractions Operations with fractions	R1 Value for money Introduction to proportion Exchanging money Sharing in a ratio G2 Angles and parallel lines Angles in polygons	A2 Rearranging formulae Inequalities Simultaneous equations Special sequences	N3 HCF and LCM Working with indices, including negative Standard Form Percentages of an amount Change to a percentage Rounding to a s.f.	A3 Factorise and solve quadratics Equations of straight line graphs Cubic and reciprocal graphs R2 Percentage change Simple interest	PPE Prep PPE PPE Feedback and action plans

	Reciprocals	Bearings Constructions Sectors and segments Pythagoras' theorem		Estimation Bounds A3 Factorise and solve quadratics Equations of straight line graphs Cubic and reciprocal graphs	Compound units Distance-Time graphs Similar shapes Compound interest	
Year 10 Numeracy	Written multiplication of 4-digit numbers by 2-digit numbers Use brackets and BODMAS Multiply decimals by whole numbers	Find any percentage of a number Convert from fractions and decimals to percentages Add and subtract fractions with different denominators	Check solutions to questions and problems by considering whether the answer is sensible **Check solutions to questions and problems by using suitable approximations**	**Use direct proportion in simple problems** **Use ratio notation** **Divide a quantity into 2 or 3 parts in a given ratio**	**Convert between currencies** **Calculate simple interest** **Calculate wages and salaries, including national insurance and tax deductions**	Know and use units of measure for length, weight, angles, capacity, temperature, including metric and imperial units and degrees eg imperial units include miles, inches, feet, pounds, gallons and pints Add and subtract measures Convert units of measure in its same systems Read integer scales Draw lines and angles, accurate to the nearest cm and degree

Year 10 Higher	**A2** Rearranging formulae Inequalities Simultaneous equations Special sequences **P1** Two-way tables Frequency tables Venn diagrams Averages from a table Tree diagrams Sampling	**R1** Percentage change Simple and compound percentage change Compound units Similar shapes D-T graphs Direct and inverse proportion **A3** Factorising and solving quadratics Roots and turning points of quadratics Equations of straight line graphs	**A3** Simultaneous equations Geometric progressions **G2** Loci Sectors and segments Congruency Trigonometry Spheres, cones and frustums	**P2** Tree diagrams Stratified sampling Cumulative frequency and box plots Histograms **A4** Product of 3 binomials Iterative processes Rearranging difficult formulae Using the quadratic formula Factorising harder quadratics	**N2** Negative and fractional indices Error intervals Recurring decimals to fractions Surds **G3** Exact trig values Introduction to vectors Enlargements (negative scale factors) Combinations of transformations Circle theorems Similarity	PPE Prep PPE PPE Feedback and action plans
Year 11 Foundation	**R2** Percentage change Simple interest Compound units Distance-Time graphs Similar shapes Compound interest **P2** Tree diagrams Sampling populations including stratified	**G3** Loci Congruent triangles Trigonometry Spheres and cones Introduction to vectors PPE prep PPE PPE Feedback and action plans	REVISION	REVISION	REVISION	
Year 11 Numeracy	Work out the perimeter of rectangles and shapes made from	**Volumes of prisms and cylinders**	Read, write and use everyday tables, charts eg mileage charts, bar			

	rectangles Work out the area of rectangles and shapes made from rectangles		charts, line graphs, currency conversion tables and timetables (bus, train and airlines)		
Year 11 Higher	A5 Algebraic proof Trigonometric graphs Graph transformations Equations of circles G4 Sine rule Cosine rule Vectors	A6 Regions Completing the square Algebraic fractions Simultaneous equations involving non-linears Composite functions PPE prep PPE PPE Feedback and action plans	REVISION	REVISION	REVISION
Sixth Form resit	Groundwork: Number All 4 operations Rounding Fractions, decimals and percentages Laws of indices Prime factors LCM and HCF Groundwork: Algebra Simplify expressions	Straight-line graphs Angle properties in shapes Accuracy Circles Equations and inequalities Probability	Constructions Quadratics Quadratic graphs Ratio and compound measures Proportion Simultaneous equations	Pythagoras' theorem Statistical graphs and measures Transformation of shapes and vectors Bivariate data Sampling Probability of	Trigonometry Further graphs Mathematical arguments REVISION	

	Index notation Substitution Coordinates Groundwork: Geometry Angles in polygons and parallel lines Perimeter Area Groundwork: Statistics Pictograms Bar charts Pie charts Line graphs Stem and leaf diagrams Percentage Indices and roots Algebraic manipulation	Sequences		combined events Volume and surface area		
Maths in Context	A1: Sampling A2: Time series and moving averages A3: Constructing diagrams for grouped and ungrouped data A4: Interpret and analyse data through diagrams A5: Interpret and analyse: include standard deviation	SG1: Growth and decay with percentages SG2: Simple interest and compound interest SG3: Recognise and sketch different functions SG4: Interpret gradients at points SG5: Calculations with roots and	LP1: Simultaneous equations and understanding solutions LP2: Solve linear inequalities LP3: Use algebra to support and construct arguments Linear programming with up to 3 variables	P1: Theoretical probability P2: Calculating probability P3: Tree diagrams and Venn diagrams P4: Use and interpret formula with probability P5: Understand and interpret risk	REVISION	

	and variance A6: Recognise correlation and examine in relation to causation A10: Use and apply Spearman's rank	indices SG6/9/10: Recognise and use sequences				
AS Maths	P1: Coordinate Geometry P2: Algebra and functions P3: Further algebra	P4: Trigonometry P5: Vectors P8: Exponentials and Logarithms	P6: Differentiation P7: Integration S1: Statistical sampling S2: Data presentation and interpretation	S3: Probability S4: Statistical distribution M1: Quantities and units in mechanics M2: Kinematics 1 (constant acceleration)	S5: Statistical hypothesis testing M3: Forces and Newton's law M4: Kinematics 2 (variable acceleration) REVISION	
A2 Maths	P1: Proof P2: Algebraic and partial fractions P3: Functions and modelling P6: Trigonometry	P4: Series and sequences P5: The binomial theorem P7: Parametric equations P8: Differentiation	P9: Numerical methods P10: Integration P11: Integration	S1: Regression and correlation S2: Probability M1: Moments M2: Forces at an angle	S3: The normal distribution M3: Application of kinematics M4: Application of forces REVISION	